

(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:
OLLI PIIRAINEN

Confirmation Number: 6720

Application No.: 09/355,623

Group Art Unit: 2618

Filed: October 5, 1999

Examiner: TRAN, Tuan A.

Title: A TRANSMISSION METHOD IN A RADIO SYSTEM ADJUSTING
TRANSMISSION MOMENTS

APPEAL BRIEF

MS APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Dear Sir:

As required under 37 C.F.R. § 41.37(e), this brief is timely filed with a four (4) month extension of time from the date of the Notice of Appeal submitted on September 22, 2008, filed in response to the Non-Final Office Action twice rejecting the claims, and mailed on March 21, 2008.

The Director is authorized to charge the \$540.00 fee for filing a brief in support of appeal pursuant to 37 C.F.R. §41.20(b)(2). The Director is authorized to charge \$1730.00 fee for filing a four-month extension of time pursuant to 37 C.F.R. §1.17(a)(1). The Director is further authorized to charge any additional fees that may be due or credit any overpayment to Deposit Account No. **03-3975** under ref. no. 025761-0262375 from which the undersigned is authorized to draw.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

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|------|-----------------------------------|
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Appendix B	Evidence - NONE
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I. REAL PARTY IN INTEREST

The real party in interest for this appeal is NOKIA NETWORKS OY, Espoo, Finland. Evidence of this interest is provided by way of an Assignment to NOKIA NETWORKS OY recorded in the U.S. Patent Trademark Office at Reel/Frame: 010333 / 0813.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

- A. Total Number of Claims in Application: 34
34 claims are pending, of which claims 1, 17, and 34 are independent.
- B. Current Status of Claims
 - 1. Claims canceled: NONE
 - 2. Claims withdrawn from consideration but not canceled: NONE
 - 3. Claims pending: 1-34
 - 4. Claims allowed: NONE.
 - 5. Claims rejected: 1-34
- C. Claims On Appeal: 1-34

IV. STATUS OF AMENDMENTS

No Amendment After Final Rejection has been filed in this application. The claims stand twice rejected in the Non-Final Office Action mailed March 21, 2008, upon which this Appeal is taken.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In compliance with the Patent Rules, independent claims 1, 17, and 34 are described below, and include references and citations to the specification, drawings, and reference numerals. Citations in support of the claimed subject matter are made with respect to the page and line numbers of the originally-filed Specification, in the format "*p. x, ll. y-z*" or "*p. x, l. y*", and/or with reference to the Drawings, in the format "element X, FIG. Y".

Limitations that arguably fall under the ambit of 35 USC 112, ¶6 "means plus function" limitations are described below with reference to the structure that performs the claimed function.

Such description is intended to facilitate an understanding of the claims by the Board Members and is not intended as a comprehensive claim construction, such as used in the context of an argument of invalidity or infringement. Any reference to more than one reference number or character for any particular claimed element or limitation is illustrative only and is not to be construed as an admission that the claims are limited to any, or all, of the particularly disclosed embodiments.

Independent claim 1, as it currently stands, sets forth the following:

1. A transmission method used in a radio system that includes at least one base station comprising a plurality of RF heads and a plurality of subscriber terminals, at least two of which transmit access bursts to one and the same base station via different RF-heads, the access bursting activating between a subscriber terminal and a base station a connection that is established by a signal that is of a certain frequency and is sent in time slots, the method comprising: (*see p. 2, paragraph starting at line 22,*

in specification amendment entered with RCE on 4/10/03; see original claim 1 in PCT/FI98/00946)

commanding a first subscriber terminal to send the at least one base station a first signal using a determined time slot and a determined carrier frequency; *(see p. 2, paragraph starting at line 22, in specification amendment entered with RCE on 4/10/03; see p. 5, lines 16-25; see original claim 1 in PCT/FI98/00946)*

commanding a second subscriber terminal to send the at least one base station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal; *(see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see original claim 1 in PCT/FI98/00946)* and

commanding at least the second subscriber terminal to adjust a transmission moment of the second signal within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot. *(see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see adjustment means 205 in FIG. 4 and p. 6, paragraph starting at line 1; and see original claim 1 in PCT/FI98/00946)*

Independent claim 17, as it currently stands, sets forth the following:

17. A radio system including at least one base station comprising a plurality of RF heads and a plurality of subscriber terminals, at least two of which transmit access bursts to one and the same base station via different RF-heads, the access burst activating between a subscriber terminal and a base station a connection that is established by a signal of a certain frequency sent in time slots, the radio system comprising: *(see p. 3, paragraph starting at line 1, in specification amendment entered with*

RCE on 4/10/03; see p. 4, paragraph starting at line 2; and see original claim 17 in PCT/FI98/00946)

means for commanding a first subscriber terminal to send the at least one base station a first signal using a determined time slot and a determined carrier frequency; *(means plus function limitation under 35 USC 112, ¶ 6, see FIG. 2, transceiver control block 120; see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see p. 5, lines 16-25; see original claim 17 in PCT/FI98/00946)*

means for commanding a second subscriber terminal to send the at least one base station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal; *(means plus function limitation under 35 USC 112, ¶ 6, see FIG. 2, transceiver control block 120; see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see p. 5, lines 16-25; see original claim 17 in PCT/FI98/00946)* and

means for commanding at least the second subscriber terminal to adjust a transmission moment of the second signal to be transmitted to the at least one base station within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot. *(means plus function limitation under 35 USC 112, ¶ 6, see FIG. 4, adjustment means 205 implemented by a computer processor running appropriate code; see p. 2, paragraph starting at line 22, p. 3, paragraph starting at line 1, p. 7, paragraph starting at line 12, and p. 8, paragraph starting at line 7, in specification amendment entered with RCE on 4/10/03; see p. 6, lines 1-8; see original claim 17 in PCT/FI98/00946)*

Independent claim 34, as it currently stands, sets forth the following:

34. A base station which receives access bursts from at least two of a plurality of subscriber terminals via different RF-heads, the access burst activating between a subscriber terminal and the base station a connection that is established by a signal of a certain frequency sent in time slots, the base station comprising: *(see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see p. 6, lines 1-8)*

means for commanding a first subscriber terminal to send the base station a first signal using a determined time slot and determined carrier frequency; *(means plus function limitation under 35 USC 112, ¶ 6, see FIG. 2, transceiver control block 120; see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see p. 5, lines 16-25)*

means for commanding a second subscriber terminal to send the base station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal; *(means plus function limitation under 35 USC 112, ¶ 6, see FIG. 2, transceiver control block 120; see p. 2, paragraph starting at line 22 and p. 3, paragraph starting at line 1, in specification amendment entered with RCE on 4/10/03; see p. 5, lines 16-25) and*

means for commanding at least the second subscriber terminal to adjust a transmission moment of the second signal to be transmitted to the base station within the determined time slot so that the base station receives the transmitted first and second signals at different moments within the same time slot. *(means plus function limitation under 35 USC 112, ¶ 6, see FIG. 4, adjustment means 205 implemented by a computer processor running appropriate code; see p. 2, paragraph starting at line 22, p. 3, paragraph starting at line 1, p. 7, paragraph starting at line 12, and p. 8,*

*paragraph starting at line 7, in specification amendment entered with
RCE on 4/10/03; see p. 6, lines 1-8)*

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection submitted for review are those identified in the Non-Final Office Action mailed March 21, 2008, as follows:

A. Unpatentability rejection of claims 1-11, 13-15, 16-27, and 29-34 under 35 U.S.C. §103(a), as allegedly being unpatentable over Kay et al. (US 5,357,513) ("Kay").

The Arguments presented below are directed to independent method claim 1 such that the patentability of dependent claims 2-16 rises and falls on the patentability of independent claim 1.

Separate arguments for the patentability of independent system claim 17 are also being presented herein. Independent base station claim 34 rises or falls on the patentability of independent system claim 17, such that separate arguments for patentability are not presented herein.

B. Unpatentability rejection of claims 12 and 28 under 35 U.S.C. §103(a), as allegedly being unpatentable over Kay et al. (US 5,357,513) ("Kay") in View of Bjork (US 6,084,862).

In the interests of brevity, the patentability of dependent claims 12 and 28 stands or falls on the patentability of independent claims 1 and 17 from which these claims respectively depend. Accordingly, separate arguments for the patentability of claims 12 and 28 are not presented in this Brief, except to the extent that Appellant notes that Björk fails to remedy the deficiencies of Kay.

Björk merely teaches determining a residual energy metric from a corresponding channel estimate, a known training sequence and a corresponding set of received samples. The one or more residual energy metrics are then used to estimate received useful energy and reflection energy in a received signal. A measure of time dispersion in the signal that has been received from the channel may then be obtained by comparing the estimated received and reflected energy.

VII. ARGUMENT

At the outset, the prior art rejections are improper with respect to the unpatentability rejections of independent claims 1, 17, and 34 because the Examiner has not presented a *prima facie* case of obviousness with respect to the claims, and must fail at least for that reason. First, the single asserted reference, whether taken alone or in combination, does not teach or suggest the entire claimed combination of elements. Accordingly, Appellant respectfully traverses the rejections set forth by the Examiner. Even assuming, *arguendo*, that the Examiner's reliance upon "well-known" features is well-founded, a proposition with which Appellant does not necessarily agree, it is only through the use of impermissible hindsight that the modification of sole reference cited by the Examiner and applied in the unpatentability rejection would take place.

A. The Examiner has not made the required *prima facie* case for unpatentability of claims 1-11, 13-15, 16-27, and 29-34 under 35 U.S.C. §103(a), as allegedly being unpatentable over Kay et al. (US 5,357,513) ("Kay").

Appellant respectfully points out that, to establish a *prima facie* case of obviousness, three basic criteria are required. First, there must be some apparent reason, suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.¹ Further, the apparent reason, teaching, or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.²

The Supreme Court recently held that it is necessary, *inter alia*, for a court to look to interrelated teachings of multiple patents in order to determine whether there was an "apparent reason" to combine the known elements in the claimed manner and, in this regard, the Court held "[t]o facilitate review, this analysis should be made explicit."³ "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of

¹ See MPEP §2143.

² *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) and See MPEP §2143.

³ *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. ____ (see p. 14), 127 S.Ct 1727, 1731 (2007).

obviousness.”⁴ The Examiner has not met this burden, as discussed with more particularity below.

1. Kay does not teach or suggest all the limitations recited in Claim 1.

Clearly, Kay does not disclose, teach, or suggest a transmission method used in a radio system that includes at least one base station comprising a plurality of RF heads and a plurality of subscriber terminals, at least two of which transmit access bursts to one and the same base station via different RF-heads, the access bursting activating between a subscriber terminal and a base station a connection that is established by a signal that is of a certain frequency and is sent in time slots, wherein the method includes, *inter alia*, "...commanding a second subscriber terminal to send the at least one base station a second signal ***using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal;*** and commanding at least the second subscriber terminal ***to adjust a transmission moment of the second signal within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot***", as recited in independent claim 1 (*emphasis added*).

Accordingly, since the applied art does not teach or suggest all the claimed limitation, reversal of the rejections by the Honorable Board is respectfully requested.

2. Discussion of Kay

According to the Abstract, Kay purportedly relates to transmission power level adjustment in a mobile telephone system that multiplexes plural voice traffic channels on a single carrier using a TDMA protocol. The capacity of the mobile telephone system is asserted as being increased by assigning voice traffic capacity, not on a conversation basis, but on a speech spurt basis. Delays of undetermined duration may occur between subsequent information bursts which correspond to the transmission of speech spurts. An adjustment request regarding the ***power*** with which the information bursts are transmitted from a transmitting station to a receiving station is generated by detecting an information burst transmission at the receiving station, measuring the time which elapses following the transmission, and comparing the elapsed time with a threshold value. If the elapsed time exceeds a threshold, a further transmission is

⁴ See *Id.*, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ 2d 1329, 1336 (Fed. Cir. 2006).

requested from the transmitting station notwithstanding the availability of any information to transmit. The power of the transmission received in response to the request is measured, and ***a control message for requesting an adjustment to the transmission power level in response to the measurement is transmitted to the transmitting station.***

Kay is completely silent on inducing two mobile stations to transmit signals in the same time slot and at the same frequency. Further, Kay is completely silent on any method, system, or arrangement ***to mitigate the resulting interference*** that would result from simultaneous transmission by two mobile stations in the same time slot and at the same frequency, as would result from implementing the claims on appeal.

Instead, Kay at col. 18:20-56 asserts a method of reducing ambient noise level at the mobile unit between speech spurts. If, at the end of a particular speech, spurt ambient noise is at a relatively low level, then the base station would be adding low level idle channel noise in the forward direction. If just before the next speech spurt, the ambient noise level is significantly increased, then the listener at the PSTN end will hear a discontinuity in the ambient noise level. To overcome this problem, the base station can initiate a procedure to actually measure ambient noise level by sending (on the forward channel FC) a reverse channel assignment to the mobile for a predetermined duration, *e.g.* four frames. The mobile unit then transmits (even in the absence of speech) a signal registering ambient noise level over the assigned four frames. The base station can then use this information to adjust its idle channel noise level to avoid overloading the RA channels.

The Examiner alleges that FIG. 16 discloses both a first signal (RR) being sent from a first subscriber terminal using a determined timeslot 1 and a determined frequency 7, as well as a second signal (RR) using the determined timeslot 1 and a determined frequency 7 simultaneously employed by the first subscriber terminal, as claimed by Appellant. ***Appellant traverses this mischaracterization of Kay, which is completely without technical foundation.***

Instead, what FIG. 16 clearly shows is an alternative aspect of Kay ***directed to a single subscriber terminal*** in which a variation on the frequency hopping and complement of reverse control sub-slots such as that of FIG. 14 is provided. This variation is asserted as being useful in the event that more than 24 sub-slots per frame time are required, so that the arrangement of FIG.

15 can be altered to include 7 or 9 control slots per frame time, using 7 or 9 frequencies, as shown in FIGS. 16 and 17, respectively. See Kay at col. 5:64-66 and col. 13:13-16.

Appellant recognized in his application that, since the signals transmitted at the same frequency and in the same time slot can be separated after the signals have been received (e.g., using the variously disclosed and claimed time shift and correlation techniques), the radio system can be implemented by using a minimal number of radio frequencies. Additionally, signals can be received even at low signal reception levels.

In stark contrast, Kay merely teaches a radio telephony system with a plurality of transmitting stations, where each station transmits information bursts to another station on radio carrier frequencies divided into time slots, and where delays of undetermined duration may occur between subsequent information bursts. Kay teaches generating an adjustment request regarding the **power** (not time shift) with which the information bursts are transmitted from a transmitting station to a receiving station, detecting an information burst transmission at the receiving station, measuring the time which elapses following the transmission, and comparing the elapsed time with a predetermined threshold value (and not imposing a time shift in transmission in the timeslot). **Power levels** are adjusted, and no time delay within a slot is imposed on any mobile station transmitting using the same determined timeslot and frequency as another transmitting mobile station.

To summarize, Kay provides no teaching or suggestion of two mobile subscriber stations (purposefully or not) both ***transmitting using a determined timeslot and a determined frequency***, and certainly does not teach or suggest ***adjusting a transmission moment*** (i.e., a time of transmission) of the second signal within the determined time slot ***so that the base station receives the transmitted first and second signals at different moments within the same time slot***.

The Examiner admits that Kay is deficient with respect to providing a teaching or suggestion of the base station including a plurality of RF heads and that access bursts are received in the base station using different RF heads, but asserts, without proof, that base stations with multiple RF heads are widely known in the art, and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ multiple RF heads in the base station of the radio system as disclosed by Kay for the advantage of enhancing signal

quality as well as extending coverage of the base station to areas (e.g., pico-cellular environment) where signals are degraded due to terrain or obstacles such as mountains, trees, buildings or walls. Appellant respectfully traverses this reliance upon "well-known" features, as discussed below.

3. Reliance Upon "Well-Known" Features Does not Mitigate the Fundamental Deficiencies of Kay

As required by MPEP 2143.03, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art and that only in limited circumstances is it appropriate for an Examiner to rely on "common knowledge" in making a rejection, and that such rejections should be judiciously applied. The MPEP goes on to require that any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the Examiner to support a particular ground for rejection.

The MPEP goes on in that section to require that any rejection based on assertions that a fact is well-known or is common knowledge in the art without documentary evidence to support the Examiner's conclusion should be judiciously applied. Furthermore, any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the Examiner to support a particular ground for rejection. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based.⁵

Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 CFR 1.113. Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and

⁵ See *In re Zurko*, 258 F.3d 1379, 59 USPQ2d 1693 (Fed. Cir. 2001); *In re Ahlert*, 424 F.2d 1088, 165 USPQ 418 (CCPA 1970).

unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)).

* * *

It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21. *See also In re Grose*, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979)...("[W]e reject the notion that judicial or administrative notice may be taken of the state of the art. The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amenable to the taking of such notice.").

It is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697 ("[T]he Board cannot simply reach conclusions based on its own understanding or experience-or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings."). While the court explained that, "as an administrative tribunal the Board clearly has expertise in the subject matter over which it exercises jurisdiction," it made clear that such "expertise may provide sufficient support for conclusions [only] as to peripheral issues." *Id.* at 1385-86, 59 USPQ2d at 1697. As the court held in *Zurko*, an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support. *Id.* at 1385, 59 USPQ2d at 1697. *See also In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002) (In reversing the Board's decision, the court stated "'common knowledge and common sense' on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfill the agency's obligation....The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.").

MPEP 2144.03

Appellant submits that relying on asserted "well known" features to provide a teaching of the recited "plurality of RF heads" is not, in any sense, "gap filling", even if the recitations are found in the preambles of independent claims 1, 17, and 34.

Notwithstanding this deficiency and assuming, *arguendo*, that such features are, indeed, "well-known" and capable of "instant and unquestionable demonstration as being well-known" as required by the MPEP (and the law), Appellant points out that Kay does not provide a teaching or suggestion of the other limitations of independent claim 1, identified above such that reversal of the rejections and allowance of claims 1-34 are respectfully requested.

B. Separate Arguments Against the Unpatentability rejection of claims 17-27, and 29-34 under 35 U.S.C. §103(a), as allegedly being unpatentable over Kay et al. (US 5,357,513) ("Kay").

The Separate Arguments presented below are directed to independent system claims 17 such that the patentability of independent base station claim 34 and dependent claims 18-33 rises and falls on the patentability of independent system claim 17.

1. The Examiner has not Identified where each Limitation of Independent Claims 17 and 34 is Found in Kay

As a threshold matter, the Examiner has failed to meet his burden as required by the MPEP⁶ with respect to citing the specific basis for rejection, including where each limitation of the pending claims may be found in Kay, the applied art. The Examiner ignores the different statutory classes of claims and their inherently different limitations in asserting on page 5 of the Final Office Action, without any support at all, that "[c]laims 17-27 and 29-34 are rejected for the same reasons as set for the in [method] claim[s] 1-11 and 13-16, as apparatus [sic]", and on page 6 of the Final Office Action that "[c]laim 28 is rejected for the same reasons as set forth in claim 12, as apparatus [sic]". Given the paucity of the statement of the rejection, Appellant is at a disadvantage with respect to being able to respond in a complete manner to the purported rejection.

⁶ For example, see MPEP 706.02(j) "Contents of a 35 U.S.C. 103 Rejection".

2. Kay does not teach or suggest all the limitations recited in Claim 17 or Claim 34

Notwithstanding this threshold deficiency of the office action upon which Appeal is taken, Kay does not disclose, teach, or suggest a radio system including at least one base station comprising a plurality of RF heads and a plurality of subscriber terminals, *at least two of which transmit access bursts to one and the same base station via different RF-heads*, the access burst activating between a subscriber terminal and a base station a connection that is established by a signal of a certain frequency sent in time slots, wherein the radio system includes, *inter alia*, "...means for commanding a second subscriber terminal to send the at least one base *station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal*; and means for commanding at least the second subscriber terminal *to adjust a transmission moment of the second signal to be transmitted to the at least one base station within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot*", as recited in independent claim 17 (*emphasis added*).

Finally, Kay does not disclose, teach, or suggest a base station *which receives access bursts from at least two of a plurality of subscriber terminals via different RF-heads*, the access burst activating between a subscriber terminal and the base station a connection that is established by a signal of a certain frequency sent in time slots, the base station including, *inter alia*, "...means for commanding a second subscriber terminal to send the base station *a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal*; and means for commanding at least the second subscriber terminal *to adjust a transmission moment of the second signal to be transmitted to the base station within the determined time slot so that the base station receives the transmitted first and second signals at different moments within the same time slot*", as recited in independent claim 34 (*emphasis added*).

Accordingly, since the applied art does not teach or suggest all the claimed limitations, reversal of the rejections and allowance of claims 17-27, and 29-34 by the Honorable Board are respectfully requested.

VIII. CONCLUSION

For at least the foregoing reasons, it is respectfully submitted that claims 1-34 are not rendered obvious, either alone or in any combination or modification of the reference applied under 35 U.S.C. §103(a). Accordingly, Appellant respectfully requests that the Honorable Board reverse the rejection of these claims and direct that the claims be passed to issue.

The following Appendices to this Brief are provided, as required under the Patent Rules:

Appendix A Claims on appeal (claims 1-34)

Appendix B Evidence (NONE)

Appendix C Related Proceedings (NONE).

Date: March 23, 2009

Respectfully submitted,

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Attachment: Petition for 4-Month Extension of Time

APPENDIX A

Claims Involved in the Appeal of Application Serial No. 09/355,623

1. A transmission method used in a radio system that includes at least one base station comprising a plurality of RF heads and a plurality of subscriber terminals, at least two of which transmit access bursts to one and the same base station via different RF-heads, the access bursting activating between a subscriber terminal and a base station a connection that is established by a signal that is of a certain frequency and is sent in time slots, the method comprising:

commanding a first subscriber terminal to send the at least one base station a first signal using a determined time slot and a determined carrier frequency;

commanding a second subscriber terminal to send the at least one base station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal; and

commanding at least the second subscriber terminal to adjust a transmission moment of the second signal within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot.

2. The method of claim 1, wherein the transmission moment is adjusted before an actual connection is established.

3. The method of claim 1, wherein the sent command is to delay the transmission moment of the signal.

4. The method of claim 1, wherein the sent command is to advance the transmission moment of the signal.

5. The method of claim 1, wherein the sent command is to delay the transmission moment of the signal by substantially at most an 11-bit period.

6. The method of claim 1, wherein the sent command is to advance the transmission moment of the signal by substantially at most an 11-bit period.

7. The method of claim 1, wherein the transmission moment of the signal is adjusted by at most the tail bits at the beginning of the burst and the guard period at the end of the burst.

8. The method of claim 1, further comprising forming impulse responses from the signals received by the base station, the impulse responses being defined to have a length of a minimum of substantially 3 bits.

9. The method of claim 1, wherein at least two signals of the same frequency are separated from each other, the signals having been received by the base station from one and the same time slot.

10. The method of claim 9, wherein the signals are separated by training sequences of signals received at different moments.

11. The method of claim 1, further comprising:

correlating the signals received by the base station;

based on the correlation, selecting the signal with the best quality or the highest energy;
and

using the selected signal as a connection-establishing signal.

12. The method of claim 1, further comprising:

correlating the signals received by the base station using a training sequence;

placing signals formed based on the correlation in windows; and

comparing the summed energies of the impulse responses of the signals placed in the windows.

13. The method of claim 1, wherein the sent command is to change the signal transmission frequency, if the signal transmitted by the subscriber terminal interferes with a signal transmitted by another subscriber terminal.

14. The method of claim 1, wherein the frequencies used in different signals are predetermined.

15. The method of claim 1, wherein the signals are transmitted by a time division multiple access method.

16. The method of claim 1, wherein the method is particularly suited for radio systems used in offices.

17. A radio system including at least one base station comprising a plurality of RF heads and a plurality of subscriber terminals, at least two of which transmit access bursts to one and the same base station via different RF-heads, the access burst activating between a subscriber terminal and a base station a connection that is established by a signal of a certain frequency sent in time slots, the radio system comprising:

means for commanding a first subscriber terminal to send the at least one base station a first signal using a determined time slot and a determined carrier frequency;

means for commanding a second subscriber terminal to send the at least one base station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal; and

means for commanding at least the second subscriber terminal to adjust a transmission moment of the second signal to be transmitted to the at least one base station within the determined time slot so that the at least one base station receives the transmitted first and second signals at different moments within the same time slot.

18. The radio system of claim 17, wherein the adjustment means adjust the transmission moment before an actual connection is established.

19. The radio system of claim 17, wherein the transmission means send a command that delays the transmission moment of the signal.

20. The radio system of claim 17, wherein the transmission means send a command that advances the transmission moment of the signal.

21. The radio system of claim 17, wherein the transmission means send a command that delays the transmission moment of the signal by substantially at most an 11-bit period.

22. The radio system of claim 17, wherein the transmission means send a command that advances the transmission moment of the signal by substantially at most an 11-bit period.

23. The radio system of claim 17, wherein the adjustment means adjust the transmission moment of the signal by at most the tail bits at the beginning of the burst and the guard period at the end of the burst.

24. The radio system of claim 17, wherein the adjustment means are located in a subscriber terminal.

25. The radio system of claim 17, further comprising correlation means for forming impulse responses from the signals received by the base station, the correlation means defining the impulse responses so that they have a length of a minimum of substantially 3 bits.

26. The radio system of claim 17, further comprising correlation means that, based on the training sequences accompanying the signals transmitted by the subscriber terminal, separate from each other at least two signals that have the same frequency and have been received from the same time slot.

27. The radio system of claim 17, further comprising correlation means that correlate the signals received by the base station and select, based on the correlation, the signal with the best quality or the highest energy, and the selected signal is then used as an actual connection-establishing signal.

28. The radio system of claim 17, further comprising correlation means that correlate the signals received by the base station using training sequences, and that place the signals formed based on the correlation in windows, and that compare the summed energies of the impulse responses of the signals placed in the windows, whereby the interference signals and the subscriber terminal producing the interference signal can be detected.

29. The radio system of claim 17, further comprising correlation means that correlate the signals received by the base station and detect, based on the correlation, the signals interfering with the reception of the signal.

30. The radio system of claim 17, wherein the transmission means command the subscriber terminal to change the signal transmission frequency, if the signal transmitted by the subscriber terminal interferes too much with a signal transmitted by another subscriber terminal.

31. The radio system of claim 17, further comprising storage means, which store information about the frequencies already used in different signals.

32. The radio system of claim 17, wherein a time division multiple access method is used in the radio system.

33. The radio system of claim 17, wherein the base station of the radio system is an office base station.

34. A base station which receives access bursts from at least two of a plurality of subscriber terminals via different RF-heads, the access burst activating between a subscriber terminal and the base station a connection that is established by a signal of a certain frequency sent in time slots, the base station comprising:

means for commanding a first subscriber terminal to send the base station a first signal using a determined time slot and determined carrier frequency;

means for commanding a second subscriber terminal to send the base station a second signal using the determined time slot and the determined carrier frequency simultaneously employed by the first subscriber terminal; and

means for commanding at least the second subscriber terminal to adjust a transmission moment of the second signal to be transmitted to the base station within the determined time slot so that the base station receives the transmitted first and second signals at different moments within the same time slot..

APPENDIX B – EVIDENCE RELIED UPON BY THE EXAMINER

No new evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.

APPENDIX C – RELATED PROCEEDINGS

NONE

No related proceedings are referenced in Section II of this Brief. above, hence copies of decisions in related proceedings are not provided.